Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRIAN L. RIEDEL, JOHN T. STRUNK
and RANDALL R. CLARK

Appeal No. 2004-0568
Application No. 09/229,547

ON BRIEF

Before KIMLIN, OWENS and WALTZ, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 3 and 8-19. Claims 5-7 stand withdrawn from consideration. Claims 3, 8 and 13 are illustrative:

3. A method of forming and installing an acoustic panel having a backside laminate ply build-up area to an aircraft structure without loss of acoustic area comprising the steps of:

increasing the backside laminate ply build-up area thickness in the region of blind fastener attachments of said acoustic panel to react bearing loads and provide stiffness for bending to retain a plurality of blind fasteners; and then

backside fastening said plurality of single piece blind fasteners to the aircraft structure.

8. An acoustic panel defining air flow direction in an aircraft engine comprising:

a perforated inner sheet;

a honeycomb core arranged over said perforated inner sheet;

an outer sheet attached to said honeycomb core; and,

blind bolts for backside fastening said acoustic panel to aircraft engine structure.

13. In combination in an aircraft engine having an engine inlet and a fan duct or thrust reverser:

an acoustical panel providing air flow direction;

said acoustical panel having an inner face sheet;

said inner face sheet having an entire perforated and acoustically treated surface area;

a honeycomb core disposed over said perforated sheet; and

an outer sheet attached to said honeycomb core;

said honeycomb core bonded to said perforated sheet; and,

said outer sheet bonded to said honeycomb core.

In the rejection of the appealed claims, the examiner relies upon the admitted prior art in addition to the following references:

Dhoore et al. (Dhoore)	4,235,303	Nov. 25, 1980
Birbragher	4,759,513	Jul. 26, 1988

Torkelson	5,060,471	Oct. 29, 1991
Morse	5,260,525	Nov. 09, 1993

Appellants' claimed invention is directed to a method of forming and installing an acoustic panel to an aircraft structure, as well as the acoustic panel, per se. According to appellants' specification, "the present invention obviates the need for 'thru-bolt' acoustic panel retention means" (page 1, paragraph four).

Appealed claims 3, 9, 15 and 16 stand rejected under 35 U.S.C. § 112, second paragraph. Claims 13-17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by either Birbragher or Dhoore. Claims 3 and 9-12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art or Torkelson in view of Morse. Also, claims 3, 8, 9, 18 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over either Birbragher or Dhoore in view of Morse.

We have thoroughly reviewed each of appellants' arguments set forth in the principal and reply briefs on appeal. However, we find that the examiner's rejections under § 112, § 102 and § 103 are free of reversible error. Accordingly, we will sustain the examiner's rejections for essentially those reasons expressed in the Answer, and we add the following primarily for emphasis.

We consider first the examiner's rejection of claims 3, 9, 15 and 16 under § 112, second paragraph. We concur with the examiner that the language "said plurality of single piece blind fasteners" of claim 3, and "the plurality of single piece blind fasteners" of claim 9, is indefinite inasmuch as there is no prior antecedent basis in the claims for such single piece blind fasteners. Appellants do not address the single piece aspect of the claim language, and we concur with the examiner that it is not clear, for example, whether the "blind fastener attachments" and "plurality of single piece blind fasteners" of claim 3 are the same.

As for claim 15, we agree with the examiner that the language "the attachment area . . . is enlarged" is indefinite because the claim does not set forth any basis for comparison. We also agree with the examiner that the claim 15 language "thereby replacing the load carrying capability of high density core and fasteners . . ." is indefinite since it is not clear how the attachment area replaces the capability of the core and fasteners. Manifestly, reducing the load on the core and fasteners does not effect the load carrying capability of the elements.

We next consider the § 102 rejection of claims 13-17 over either Birbragher or Dhoore. The principal argument advanced by appellants is that neither reference describes the claimed "interface sheet having an entire perforated and acoustically treated surface area." According to appellants, the cited prior art does "not acoustically treat 100% of the area available" (page 5 of principal brief, first paragraph). However, since it is well settled that claim language must be given its broadest reasonable interpretation during ex parte prosecution, we agree with the examiner that the claim 13 language at issue does not require that 100% of the interface sheet be perforated and acoustically treated. Rather, the examiner has properly held that the claim language only requires that an area of the interface sheet, not 100% of the surface area of the interface sheet, be entirely perforated and acoustically treated. Indeed, appellants' specification specifically states that "[t]he hereinafter-described invention allows the entire attachment area to be treated, except for a narrow edge closeout area" (page 5, paragraph three). Also, as explained by the examiner, the disclosure in the references of adding a honeycomb core and an outer sheet meets the requirement of an acoustically treated surface area for the interface sheet. As for separately argued

claims 15 and 16, we subscribe to the following rationale set forth by the examiner:

> The arguments in reference to "increasing the outer sheet thickness in the region of fastener attachments to react bearing loads and provide stiffness for bending" is not persuasive because clearly the other references provide a sheet with thickness "increased" enough to provide the desired strength. Applicant even fails in the claim language to specify that only the area proximate the fasteners are [sic, is] increased, so a panel of uniform thickness that provides sufficient strength reads over [sic, on] the claim language [paragraph bridging pages 5 and 6 of Answer].

We now turn to the examiner's rejection of claims 3 and 9-12 under § 103 over the admitted prior art or Torkelson in view of Morse. The central issue here is the obviousness of replacing the fastening means of the admitted prior art and Torkelson, thru-bolted fasteners, with the presently claimed blind fasteners. Morse evidences that it was known in the art to employ blind fasteners, or bolts, to attach acoustic panels to a structure. In our view, although Morse does not disclose using the blind bolts to attach acoustic panels to an aircraft structure, we agree with the examiner that it would have been prima facie obvious for one of ordinary skill in the art, based on the collective teachings of the admitted prior art, Torkelson and Morse, to use the blind bolts of Morse as an alternative to the thru-bolts of the admitted prior art and Torkelson.

Appellants contend that the blind bolt, or fastening nut, of Morse requires a threaded retention member 54 positioned within the acoustic panel to receive the fastening nut. Appellants maintain that "[t]he present invention eliminates the need for a retention member to be embedded in the acoustic panel, and therefore results in a uniform acoustic treatment effectiveness" (page 6 of principal brief, paragraph four). However, we concur with the examiner that appellants' argument is not commensurate in scope with the rejected claims. The rejected claims do not define any particular structure for the blind fasteners. Hence, since the receiving nut of Morse is installed prior to assembly and may, therefore, be considered as part of the structural panel, there is no structural, patentable distinction between the blind fastening nut of Morse and the blind fasteners within the scope of the rejected claims.

The § 103 rejection of claims 3, 8, 9, 18 and 19 over Birbragher or Dhoore in view of Morse essentially involves the same issue of the obviousness of replacing the fasteners of Birbragher and Dhoore with the blind fasteners of Morse. We concur with the examiner that the requisite motivation arises from the obviousness of replacing one form of fastener with another known fastener which provides the same basic function.

Appellants have failed to apprise us why using the fasteners of Morse on the acoustic panels of Birbragher and Dhoore would have been nonnobvious to one of ordinary skill in the art. Appellants simply state that which is acknowledged by the examiner to be fact, namely, "[i]ncorporating blind fasteners of Morse '525 on the acoustic panels of Birbragher '513 or Dhoore et al. '303 is in contrast to the acoustic panel supports of Birbragher '513 or Dhoore et al. '303" (page 7 of principal brief, paragraph four). However, appellants have not proffered a substantive argument why such an incorporation of the Morse fasteners would have been nonobvious to one of ordinary skill in the art. We further note that appellants base no argument upon objective evidence of nonobviousness, such as unexpected results, which would serve to rebut the prima facie case of obviousness established in the examiner's § 103 rejections.

In conclusion, based on the foregoing and the reasons well-stated by the examiner, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

EDWARD C. KIMLIN Administrative Patent Judge	)	
TERRY J. OWENS Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
THOMAS A. WALTZ Administrative Patent Judge	)	

ECK:clm

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